Claim 160

(a) An apparatus for producing a plasma display, comprising

JP '713		
1	Inherent from the method - Claim 1	A method for producing a plasma display, in which a glass substrate with partitions formed on it is coated with a fluorescent paste containing a fluorescent material and an organic binder discharged from a paste applicator with outlet holes, and the paste is burned to form a fluorescent material layer, characterizes in that the spaces A between the respectively adjacent partitions and the average diameter B of the outlet holes satisfy the following condition: 500 μm ≧ A > B ≧ 10 μm.
2	Page 5, first paragraph and Fig. 1	In the method of the present invention, a glass substrate 3 with electrodes 1 and partitions 2 formed on it is partially coated with a fluorescent paste, particularly fluorescent materials emitting light of three primary colors of red, blue and green in stripes, to form a red fluorescent material layer 4, a blue fluorescent material layer 5 and a green fluorescent material layer 6 respectively.

(a) An apparatus for producing a plasma display, comprising

U.S. Application		
1	Page 9, lines 12-19	The apparatus for producing a plasma display of the present invention comprises a table for fixing a substrate with a plurality of barrier ribs, a paste applicator with a plurality of outlet holes to face the barrier ribs of the substrate, a supply means for supplying a phosphor paste to the paste applicator, and a moving means for three dimensionally moving the table and the paste applicator relatively each other.
2	Page 14, lines 12-14 and Fig. 3	Fig. 3 is a schematic general perspective view showing the plasma display producing apparatus as an embodiment of the present invention. 4: substrate, 20: paste applicator

(b) a paste applicator for applying, in stripes between barrier ribs, a phosphor paste containing a phosphor powder emitting light of red, green or blue onto a substrate having a plurality of the barrier ribs formed thereon,

JP '713		
1	Page 5, lines 5-11 and Fig. 1	a glass substrate 3 with electrodes 1 and partitions 2 formed on it is partially coated with a fluorescent paste, particularly fluorescent materials emitting light of three primary colors of red, blue and green in stripes, to form a red fluorescent material layer 4, a blue fluorescent material layer 5 and a green fluorescent material layer 6 respectively.
2	Page 5, third paragraph and Fig. 1	For forming the fluorescent material layers, at first, paste containing one fluorescent material selected from three colors of R, G and B is discharged from a paste applicator 8 with one or more outlet holes 7, for coating the substrate, and this operation is repeated three times for R, G and B. Then, the pastes are dried and burned, to form the fluorescent material layers. As another method, the respective fluorescent materials of R, G and B can be discharged from a paste applicator with outlet holes for simultaneously discharging R, G and B, dried and burned, to form the respective fluorescent material layers.
3	Page 22, last paragraph	A glass substrate with an electrode layer and a partition layer formed on it is coated with fluorescent pastes at desired places. For coating, each of the fluorescent pastes is discharged from a paste applicator with one or more outlet holes. The florescent pastes

		of R, G and B colors are applied in stripes by turns, to form fluorescent material layers of respective colors.
4	Page 27, second and third paragraphs	A glass substrate with two thousand 120 μm high 30 μm wide partitions formed at a pitch of 150 μm was coated with the respective pastes of red, green and blue in stripes. For coating, from a paste applicator having 640 outlet holes with a diameter of 80 μm formed at a pitch of 450 μm, at first the red fluorescent paste was discharged, and dried at 80℃ for 60 minutes with the coated side turned downward. Then, the blue fluorescent paste was discharged, and dried at 80℃ for 60 minutes with the coated side turned downward. Subsequently, the blue fluorescent paste was discharged, and dried at 80℃ for 60 minutes with the coated side turned downward. (in Example 1)
5	Page 28, last paragraph and Page 29, first paragraph	A glass substrate with two thousand 140 μm high 50 μm wide partitions formed at a pitch of 360 μm was coated with the respective pastes of red, green and blue in stripes. For coating, a paste applicator having 1940 outlet holes with a

		diameter of 100 μm formed at a pitch of 360 μm and designed to discharge the red fluorescent paste, blue fluorescent paste and green fluorescent paste respectively was used to discharge the respective fluorescent materials, and the respective fluorescent pastes were dried at 80℃ for 45 minutes. (in Example 2)
6	Page 30, first and second paragraphs	A glass substrate with two thousand 120 μm high 30 μm wide partitions formed at a pitch of 150 μm was coated with the respective pastes of red, green and blue in stripes. For coating, a paste applicator having 640 outlet holes with a diameter of 80 μm formed at a pitch of 450 μm was used to discharge the red fluorescent paste, green fluorescent paste and blue fluorescent paste in this order, and the respective pastes were dried at 80℃ for 60 minutes with the coated side turned downward. (in Example 3)

(b) a paste applicator for applying, in stripes between barrier ribs, a phosphor paste containing a phosphor powder emitting light of red, green or blue onto a substrate having a plurality of the barrier ribs formed thereon,

U.S. Application		
1	Page 46, first paragraph	The apparatus for phosphor past coating of the present invention is described below. The apparatus for producing a plasma display of the present invention is composed of a table to be mounted with a substrate with a plurality of barrier ribs and a paste applicator with a plurality of outlet holes corresponding to the spaces formed between the respectively adjacent barrier ribs on the substrate for forming stripes of the phosphor pastes on the spaces between the respectively adjacent barrier ribs.
2	Page 46, second paragraph, lines 1-3 and Fig. 3	Fig. 3 is a general perspective view showing the apparatus for producing a plasma display of the present invention as an embodiment.
3	Page 20, last paragraph and Page 21, first paragraph, lines 1-2	In the present invention, onto the glass substrate with the barrier ribs as described above, pastes respectively containing a phosphor powder are applied a paste applicator with a plurality of outlet holes, for forming the phosphor layer. The phosphor powders used emit light of red, green and blue.

(c) wherein the paste applicator is provided above the substrate

JP '713		
1	Fig. 1	8: paste applicator, 7: outlet hole, 2: partitions, 3: glass substrate, 1: electrodes
2	The paragraph spanning Pate 4 and Page 5	The object of the present invention can be achieved by a method for producing a plasma display, in which a glass substrate with partitions formed on it is coated with a fluorescent paste containing a fluorescent material and an organic binder discharged from a paste applicator with outlet holes, and the paste is burned to form a fluorescent material layer, characterized in that the space A between the respectively adjacent partitions and the average diameter B of the outlet holes satisfy the following condition: 500 μm ≧ A > B ≧ 10 μm.
3	Page 5, first paragraph	In the method of the present invention, a glass substrate 3 with electrodes 1 and partitions 2 formed on it is partially coated with a fluorescent paste, particularly fluorescent materials emitting light of three primary colors of red, blue and green in stripes, to form a red fluorescent material layer 4, a blue fluorescent material layer 5 and a green fluorescent material layer 6 respectively.
4	Page 23, third paragraph	The coating is followed by drying. If the coated substrate is dried with the coated side turned downward, the fluorescent material layers of the respective colors can be formed uniformly on the bottoms

		of the spaces between the respectively adjacent partitions and along the lateral sides. The angle of the substrate with the coated side turned downward is 0 to 30 degrees as an angle formed between the glass substrate and the horizontal plane. The drying temperature and time depend on the paste compositions and viscosities, but it is preferable to dry at 50 to 200℃ for 5 to 60 minutes.

(c) wherein the paste applicator is provided above the substrate

U.S. Application		
1	Page 37, third paragraph, lines 2-8	A phosphor paste prepared as described above is applied to the spaces between the respectively adjacent barrier ribs of the substrate with a plurality of barrier ribs. Fig. 1 shows a state where the phosphor paste is applied from the outlet holes of a paste applicator to coat the spaces between the respectively adjacent phosphor *(should be read as barrier ribs)* of the substrate provided with electrodes, dielectric and barrier ribs.
2	Page 46, first paragraph and Figs. 1, 3 and 4	The apparatus for phosphor paste coating of the present invention is described below. The apparatus for producing a plasma display of the present invention is composed of a table to be mounted with a substrate with a plurality of barrier ribs and a paste applicator with a plurality of outlet holes corresponding to the spaces formed between the respectively adjacent barrier ribs on the substrate for forming stripes of the phosphor pastes on the spaces between the respectively adjacent barrier ribs. 4: a substrate, 20: a paste applicator

(d) and having 600 to 2000 outlet holes that face the barrier ribs of the substrate,

JP '713		
1	Page 6, lines 1-3	It is preferable to discharge the fluorescent pastes simultaneously from a paste applicator with 600 to 2500 outlet holes for discharging the respective colors of R, G and B,
2	Page 23, lines 1 and 2	So, it is preferable to discharge a fluorescent paste from a paste applicator with 1 to 2000 outlet holes,
3	Page 27, last paragraph, lines 1 and 2	For coating, from a paste applicator having 640 outlet holes with a diameter of 80 μm formed at a pitch of 450 μm, (in Example 1)
4	Page 29, paragraph 1, lines 1 and 2	For coating, a paste applicator having 1940 outlet holes with a diameter of 100 μm formed at a pitch of 360 μm and (in Example 2)
5	Page 30, second paragraph, lines 1 and 2	For coating, a paste applicator having 640 outlet holes with a diameter of 80 μm formed at a pitch of 450 μm was used (in Example 3)

(d) and having 600 to 2000 outlet holes that face the barrier ribs of the substrate,

U.S. Application		
1	Page 5, last paragraph	(3) The paste applicator used has 20 to 2000 outlet holes, more preferably 150 to 2000 outlet holes.
2	Page 38, lines 16-23	The number of outlet holes can be 1 to 6000, but a desirable range is 20 to 200 *(should be read as 2000)*. If the number of outlet holes is too small, it takes too much time for coating. If the number is 150 or more desirably, a phosphor layer suitable for a highly precise plasma display can be formed in a short time. If the number of holes exceeds 2000, it is difficult to secure the accuracy of the outlet holes, and to provide a highly precise plasma display.
3	Page 69, lines 13 and 14	One paste applicator with 64 outlet holes with an average diameter of 150 μm formed at a pitch of 660 μm (in Example 1)
4	Page 71, lines 9-12	A phosphor layer was formed as described in Example 1, except that the number of outlet holes was 640, instead of 64, and that the coating with one-color phosphor paste was completed by one time of paste applicator movement. (in Example 4)
5	Page 74, lines 10 and 11	that a paste applicator with 640 outlet holes with a diameter of 80 μm formed at a pitch of 450 μm was used, (in Example 8)
6	Page 75, lines 4 and 5	that a paste applicator with 1940 outlet holes with a diameter of 100 μm formed at a pitch of 360 μm, (in Example 9)

7	Claims 5 and 6	5. A method for producing a plasma display, according to claim 1 or 2, wherein the paste applicator used has 20 to 2000 outlet holes. 6. A method for producing a plasma display, according to claim 5, wherein the paste applicator used has 150 to 2000 outlet holes.

(e) of an average diameter of 10 to 500 μm for the red, green or blue phosphor paste

JP '713		
1	Claim 1	A method for producing a plasma display, in which a glass substrate with partitions formed on it is coated with a fluorescent paste containing a fluorescent material and an organic binder discharged from a paste applicator with outlet holes, and the paste is burned to form a fluorescent material layer, characterizes in that the spaces A between the respectively adjacent partitions and the average diameter B of the outlet holes satisfy the following condition: 500 μm ≧ A > B ≧ 10 μm.
2	Page 5, lines 1-3	and the average diameter B of the outlet holes satisfy the following condition: 500 μm ≧ A > B ≧ 10 μm
3	Page 6, second paragraph, lines 1-3	It is preferable that the inner diameter of the outlet holes used in the present invention is 10 to 500 μm, and more preferable range is 50 to 200 μm.

(e) of an average diameter of 10 to 500 μm for the red, green or blue phosphor paste

U.S. Application		
1	Page 5, lines 18-20	and the average diameter (D) of the outlet holes satisfy the following formula: $10\ \mu m \leqq D \leqq S \leqq 500\ \mu m$
2	Page 38, lines 4-6	The outlet holes can have an inner diameter of 10 to 500 μm, and a preferable diameter range is 50 to 500 μm.
3	Page 38, lines 11-15	and the average diameter (D) of the outlet holes satisfy the following relation, the application of the phosphor paste onto the top surfaces of the barrier ribs can be further inhibited. $10\ \mu m \leqq D \leqq S \leqq 500\ \mu m$
4	Page 60, third paragraph	It is also preferable that the average diameter of the outlet holes of the paste applicator is 10 μm to 500 μm, and not larger than the spaces between the barrier ribs, and this prevents the mixing of adjacent colors.
5	Claim 34	An apparatus for producing a plasma display, according to claim 33, wherein the relation between the average diameter (D) of the outlet holes of the paste applicator and the space (S) between the respective

		adjacent barrier ribs satisfy the following formula: 10 μm ≦ D ≦ S ≦ 500 μm.

(f) and wherein a means for moving the substrate and the paste applicator relative to each other.

JP '713		
1	Page 5, lines 5-11 and Figs. 1 and 2 - Coating the paste in stripe in the spaces between the relatively adjacent barrier ribs formed on the substrate and Figs. 1 and 2 show relative movement between the substrate and the paste applicator. The means to achieve the movement is inherent.	a glass substrate 3 with electrodes 1 and partitions 2 formed on it is partially coated with a fluorescent paste, particularly fluorescent materials emitting light of three primary colors of red, blue and green in stripes, to form a red fluorescent material layer 4, a blue fluorescent material layer 5 and a green fluorescent material layer 6 respectively.

(f) and wherein a means for moving the substrate and the paste applicator relative to each other.

U.S. Application		
1	Page 7, second paragraph	(13) The paste applicator and the glass substrate are moved relatively each other in parallel to the barrier ribs on the glass substrate.
2	Page 9, lines 17-19	a moving means for three-dimensionally moving the table and the paste applicator relatively each other.
3	Page 46, first and second paragraphs and Figs. 1, 3 and 4	The apparatus for phosphor paste coating of the present invention is described below. The apparatus for producing a plasma display of the present invention is composed of a table to be mounted with a substrate with a plurality of barrier ribs and a paste applicator with a plurality of outlet holes corresponding to the spaces formed between the respectively adjacent barrier ribs on the substrate for forming stripes of the phosphor pastes on the spaces between the respectively adjacent barrier ribs. Fig. 3 is a general perspective view showing the apparatus for producing a plasma display of the present invention as an embodiment. 4: a substrate, 20: a paste applicator